UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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BOSTON, MASSACHUSETTS 02114-2023

September 23, 2003

Franco LaGreca
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Evaluation of Responses to Comments on the Draft Work Plan for Background Soil Investigation NUSC Disposal Area

Dear Mr. LaGreca:

EPA reviewed the responses to our comments on the Draft Work Plan for a background soil investigation at the NUSC Disposal Area (Study Area 08) Naval Underwater Warfare Center, Middletown, RI. I retained the numbering used in the Navy response to comments in the evaluation of the responses. Detailed comments are provided in Attachment A.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the investigation of NUSC Disposal Area. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Paul Kulpa, RIDEM, Providence, RI
Kathy Marley, NETC, Newport, RI
Chau Vu, USEPA, Boston, MA
Jennifer Stump, Gannet Fleming, Harrisburg, PA

ATTACHMENT A

Page	Comment
Comment 2	It is stated repeatedly (*e.g.*, Response to Specific Comment 2, and elsewhere) that the objective of the site sampling at SA-08 is to compare concentrations (possibly representing contamination due to site-related activities) in site soils to concentrations in upgradient and background soils near the site. It is clear that the Navy is not planning to include fill material (acknowledged to be present on site) in the background/upgradient sample set, but onsite fill will be sampled as part of the site investigation. In principle, EPA agrees that "...there are too many unknowns regarding the source of fill used for nearby development...to try to develop a separate data set..." for the fill. However, it will be critical to identify which site samples are from filled areas. Therefore, the on-site geologist who collects these samples should be advised to take careful notes.
Comment 9	This comment discussed the alpha level that should be selected for testing the hypothesis, Ho: $u_{background} \geq u_{site}$, which is Test Form 1 from USEPA (2000). As stated on Page 5-15 of USEPA (2000), the selection of an alpha level of 0.2 is the more conservative alpha level for this hypothesis. Conservative in this sense means that a site that is contaminated is correctly identified as contaminated. Because Test Form 1 is already biased to accept that the site is within the range of background, a more relaxed alpha level is needed to ensure that sites that are contaminated are correctly identified. A site would not necessarily require remediation simply because a constituent is identified as occurring above background. Typically, this result only ensures that the constituent is included in the risk assessment. If the constituent is found to both be above background and pose unacceptable risks, then remediation may need to be considered. EPA recognizes that arsenic does represent a unique case because of its high slope factor. The Navy may want to consider performing geochemical comparisons of site and background data for arsenic as described in the Navy (2002 and 2003) background guidance for soils and sediment if it believes that arsenic detections are naturally occurring. Regardless, to ensure that potentially contaminated sites are correctly identified, EPA maintains that an alpha level of 0.2 should be used for hypothesis testing using Test Form 1 for this site. The response indicates that the Navy will perform retrospective tests of power. EPA expect that if it is found that the power of a test is not adequate, the constituent being tested must be included in the risk assessment process. This procedure is needed in order to avoid the situation where a site, that is truly contaminated, is incorrectly identified as clean.

Comment 10 Please note that it is very unlikely that a sample set with three or even six samples will be suitable for hypothesis testing. It is very likely that the hypothesis testing for most constituents will not have sufficient power to accept the null hypothesis Ho: $u_{background} \geq u_{site}$.

Comment 12 The response indicates that analyses of herbicides or algaecides are not necessary because they are "...not actionable on Navy property" even if they originate upgradient (*i.e.*, the golf course area) and may be considered 'background' warrants further discussion. EPA believes that herbicide and algaecide sampling is required and appropriate background studies should be performed. It is inappropriate to manage risk risks (or explain them away) before completing the sampling and risk assessments.

Comment 14 This response indicates that parametric two-sample comparisons are still being considered by the Navy for constituents exhibiting data with a lognormal distribution. While the Navy may choose to run this type of test (for example a t-test on log transformed data), EPA maintains that only the results from hypothesis testing using nonparametric tests may be used to determine whether site data is within the range of background and eliminate constituents from further evaluation at this site.

REFERENCES

USEPA 2002. *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites.*

Navy 2002. *Guidance for Environmental Background analysis: Volume 1. Soil.* UG-2049-ENV.

Navy 2003. *Guidance for Environmental Background analysis: Volume II. Sediment.* UG-2054-ENV.